

**401 KAR 59:190. New insulation of magnet wire operations.**

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
Department for Environmental Protection  
Division for Air Quality

Relates to: KRS Chapter 224

Pursuant to: KRS 13.082, 224.033

Necessity and Function: KRS 224.033 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of volatile organic compound emissions from new insulation of magnet wire operations.

**Section 1. Definitions.**

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 50:010.

- (1) "Affected facility" means a coating line for insulation of magnet wire.
- (2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to a coating bath.
- (3) "Coating die" means the device, located between the applicator and the drying oven, which scrapes off excess coating and leaves a thin film of desired thickness.
- (4) "Magnet wire" means wire used in equipment such as electrical motors, generators, and transformers which carries an electrical current.
- (5) "Coating line" means a series of equipment or operations used to apply, dry, or cure any coatings coating volatile organic compounds (VOCs). This shall include, but is not limited to:
  - (a) Mixing operations;
  - (b) Process storage;
  - (c) Applicators;
  - (d) Drying operations including die area evaporation, oven drying, baking, curing, and polymerization;
  - (e) Clean up operations;
  - (f) Leaks, spills and disposal of VOCs;
  - (g) Processing and handling of recovered VOCs;
  - (h) For the purposes of determining compliance with this regulation, if any equipment or operation is considered to be a part of more than one (1) coating line, its VOC emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of VOC it receives from or distributes to each coating line;
  - (i) If any portion of the series of equipment or operations qualifies for an exemption according to Section 6, then that portion shall be considered to be a separate coating line.
- (6) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, VOCs, or recovered VOCs; but does not mean storage tanks of petroleum liquids

which are subject to 401 KAR 59:050, 401 KAR 59:052, and 401 KAR 61:050.

- (7) "Classification date" means June 29, 1979.
- (8) "VOCs net input" means the total amount of VOCs input to the affected facility minus the amount of VOCs that are not emitted into the atmosphere. VOCs that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining VOCs net input. If the nature of any operation or design of equipment permits more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

#### **Section 2. Applicability.**

- (1) This regulation shall apply to:
  - (a) Each affected facility commenced on or after the classification date defined in Section 1 of this regulation and located in a county or portion of a county designated as non attainment for ozone in 401 KAR 51:010, for any classification except marginal; and
  - (b) Each affected facility commenced on or after the effective date of this regulation which is part of a major source located in a county or portion of a county designated attainment or marginal nonattainment for ozone in 401 KAR 51:010.
- (2) Each affected facility commenced on or after the classification date defined in Section 1 of this regulation but prior to the effective date of this regulation which is part of a major source located in a county or portion of a county designated attainment or marginally nonattainment for ozone in 401 KAR 51:010 shall be exempt from this regulation except that control devices and procedures required at the time it commenced shall continue to be operated and maintained.

#### **Section 3. Standard for VOCs.**

No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the VOCs net input into the affected facility.

#### **Section 4. Compliance.**

- (1) In all cases the design of any control system shall be subject to approval by the department.
- (2) Compliance with the standard in Section 3 shall be demonstrated by a material balance unless the cabinet determines that a material balance is not possible. If a material balance is not possible, compliance shall be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency and any other factors that may influence the performance of the system. If requested by the department, performance tests specified by the cabinet shall be conducted to determine the efficiency of the control device. Capture efficiency shall be determined by procedures specified in 401 KAR 50:047 in all ozone nonattainment areas except marginal.
- (3) With the prior approval of the department, the owner or operator may elect to effect all changes necessary to qualify for an exemption under Section 6.
- (4) If deemed necessary by the department, the department shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6 of this regulation. Method 24, which has been incorporated by reference in 401 KAR 50:015, shall be

used as applicable to determine compliance of the coatings, unless the department determines that other methods would be more appropriate. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

- (5) Compliance on one (1) coating line with VOC emission limits shall be based on an averaging period not to exceed twenty-four (24) hours. If it is not economically or technically feasible to determine emission on a daily basis, alternatives expressing emission limits for longer averaging times may be accepted if approved by the cabinet. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.
- (6) The amount of exempt solvents shall be subtracted from the amount of coatings, just like water, with the ultimate value of interest being the mass of VOC per unit volume of coating less exempt solvent or water or both.
- (7) Calculations to determine equivalency on one (1) coating line shall be based on mass of VOC per volume of solids.
- (8) Daily records shall be maintained by the source for the most recent two (2) year period. These records shall be made available to the cabinet or the U.S. EPA upon request. The records shall include, but not to be limited to, the following:
  - (a) Applicable regulation number;
  - (b) Application method and substrate type;
  - (c) Amount and type of adhesive, coating (including catalyst and reduced for multi component coatings), or solvent used at each point of application, including exempt compounds;
  - (d) The VOC content as applied in each adhesive, coatings, or solvent;
  - (e) The date for each application for adhesive, coating, or solvent;
  - (f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each; and
  - (g) Oven temperature, if applicable.

#### **Section 5. Compliance Timetable.**

- (1) Affected facilities which were subject to this regulation as in effect on June 29, 1979, shall have achieved final compliance upon startup.
- (2) The owner or operator of an affected facility that, on or after the effective date of this regulation, becomes subject to this regulation for any reason other than construction, modification, or reconstruction shall be required to complete the following:
  - (a) A final control plan for achieving compliance with this regulation shall be submitted no later than nine (9) months after the date the affected facility becomes subject to this regulation.
  - (b) The control system contract or the exempt coatings and any accompanying process change contracts shall be awarded no later than eleven (11) months after the date the affected facility becomes subject to this regulation.
  - (c) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be initiated no later than thirteen (13) months after the date the affected facility becomes subject to this regulation.
  - (d) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than seventeen (17) months after the date the affected facility becomes subject to this regulation.
  - (e) Final compliance shall be achieved no later than eighteen (18) months after the date the affected facility becomes subject to this regulation.
  - (f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban

nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

#### **Section 6. Exemptions.**

- (1) Any affected facility shall be exempt from Section 3 of this regulation if the VOC content of the coating is less than 0.20 kg/l of coating (1.7 lb/gal), excluding water or exempt solvent or both, delivered to the applicators associated with the coating line.
- (2) An affected facility shall be exempt from this regulation if the total VOC emissions from all affected facilities subject to this regulation are less than or equal to:
  - (a) Three (3) lb/hr actual emissions before add-on control;
  - (b) Fifteen (15) lb/day actual emissions before add-on control; or
  - (c) Ten (10) tons per year theoretical potential emissions based on design capacity (or maximum production) and 8760 hr/yr before add-on control.
- (3) Low-use coatings shall be exempt from Section 3 of this regulation if the plantwide consumption of these coatings in the aggregate is less than or equal to fifty-five (55) gallons during the previous twelve (12) months.

Effective Date: June 29, 1979

	Date Submitted to EPA	Date Approved by EPA	Federal Register
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